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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DAGER, JONATHAN M

ART UNIT

PAPER NUMBER

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NOTIFICATION DATE

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/552,453	Applicant(s) NAGASAWA ET AL.	
	Examiner JONATHAN M. DAGER	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-12 is/are pending in the application.
- 4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04 October 2010 has been entered.

Response to Arguments

2. Applicant's arguments, see pages 5-6, filed 04 October 2010, have been fully considered but they are not persuasive.

The Applicant has contended that claim 1, as amended, has not been rendered obvious under 35 U.S.C.103(a) by the combination of Oniishi (US 5,859,845) and Kikkawa (US 2002/0003781) that the prior rejection of the claim should therefore be withdrawn.

The Examiner respectfully disagrees; regarding claim 1, Oniishi discloses a vehicle load control system suitable for use in controlling electric power fed to lamps and motors aboard a vehicle (column 1 lines 6-7).

The load control invention comprises a control section which has a plurality of control switches and generates a control signal corresponding to the actuation of each of the control switches, a multiplex processing section which multiplexes the control signal received from the control section and sends the thus multiplexed control signal to a multiplex transmission line, and load control sections which receive the multiplexed control signal sent over the multiplex

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transmission line and control the electric power fed to a corresponding one of loads on the basis of the thus received control signal (column 2 lines 58-67, column 3 line 1).

Thus, Oniishi has disclosed an invention configured to control the load electrical parts in the front of the vehicle (lights, motors, etc.), a control unit receiving a control signal for controlling (multiplex processing section, 10) the drive of the load electrical part through a main bus line of the vehicle, as well as a drive control unit (Load Control Section, see Fig. 1 index 20, 30) which is connected to the controller through another multiplex bus line, wherein the signal is converted into a drive signal for the load electrical part (e.g. 21, 31, etc).

Oniishi also discloses that the mounting position for the invention for the front electrical control unit is mounted next to the driver's seat (column 9 lines 10-12). Thus, the invention is located in the front portion of the vehicle.

Oniishi also discloses that the multiplex communication system employs a centralized control communications protocol which uses the load drive unit A 20 as the master node. The structure of characters of the data comprises one start bit, eight data bits, one parity bit (even), and one stop bit, as shown in FIG. 26. In the drawing, Tc designates a character time. The frame of the data comprises a header, the data (eight bytes), and BCC (block check characters = a checksum), as shown in FIG. 32A. A predetermined interval period Tci is ensured between the characters. In the header, a frame number is made up of B0-B3, as shown in FIG. 27B. A transmission unit ID code is made up of B4 and B5, as shown in FIG. 27C. A communication mode ID code is made up of B6 and B7, as shown in FIG. 27D (column 15 lines 66-67, column 16 lines 1-12).

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Fig. 1 details a basic block diagram of the load control system. The SW unit 10 is connected to a control section 11. The control section 11 comprises a plurality of switches 11.sub.1 -11.sub.n arranged in a control panel (not shown), and light sources 12 for illumination purposes which are incorporated in the respective control switches for illuminating the surface of the control switch, and a light source 12 for use with an indicator which indicates operating conditions. The control section 11 generates a control signal corresponding to the actuation of each control switch. The SW unit 10 comprises a control section 10b which receives the control signal from the control section 11, being made up of the control switches 11.sub.1 -11.sub.n and connected to the SW unit 10, through an input interface (I/F) 10a, and nonvolatile memory 10g which is connected to the control section 10b and is made up of E.sup.2 PROM holding various data as will be described later (column 7 lines 6-19)

The control section 10b converts the received control signal into control data and generates a transmission frame by collecting a plurality of thus converted control data items. The control section 10b sends the transmission frame to the load drive units A 20 and B 30 through the communication interface (I/F) 10c and the multiplex transmission line 40. Further, the control section 10b outputs a drive signal to a drive section 10e consisting of switching means (not shown) through an output interface (I/F) 10d. Upon receipt of the drive signal, the drive section 10e is activated so as to control the illumination of the light sources 12 respectively provided in the control switches by selectively feeding the light sources the electric power from a power supply 10f. The power supply 10f is supplied with the electric power fed from the battery 50 through the power line 60b. The power supply 10f also feeds operating power to the input I/F 10a, the control section 10b, and the output I/F 10d.

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The load drive unit A 20 is connected to a first electrical equipment group mounted on the body of the motorbus, that is, loads 21.sub.1 -21.sub.n. Further, the load drive unit A 20 is provided with a control section 20b which is connected to the SW unit 10 via the multiplex transmission line 40. The control section 20b receives the control data from the SW unit 10 by way of a communications interface (I/F) 20a. The control section 20b sends a drive signal based on the received control data to a drive section 20d, consisting of unillustrated switching means, by way of an output interface (I/F) 20c. The drive section 20d is activated by the received drive signal so as to drive an associated load by selectively feeding the electric power received from a power supply 20e to the load. The power supply 20e is supplied with the electric power fed from the battery 50 through the power line 60a. The power line 60a led into the load drive unit A 20 is divided into power lines 60b and 60c. The load drive unit A 20 is provided with a fuse F and a fusible link FL which respectively connect the power line 60a with the power lines 60b and 60c (column 7 lines 21-56).

Thus, Oniishi discloses that the front electrical control unit (multiplex processing section, 10) converts the control communication signal of the main bus line into a usable signal of the sub-bus line (40), and transmits the control signal received through the main bus line to the drive control unit (load control sections 20, 30) through the sub-bus line (40).

Oniishi discloses that FIG. 2 is a circuit diagram showing one embodiment of a vehicle load control system suitable for use as a multiplex communications system used in a motorbus. In the drawing, the motorbus multiplex communications system comprises a switch unit (SW) 10 which acts as a multiplex processing section, a load drive unit A 20 which acts as a load control section, a load drive unit B 30 which also acts as a load control section, a multiplex transmission

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line 40 which interconnects the three units with each other and establishes communications among the units (column 6 lines 54-63).

FIG. 3 shows the layout of the above described vehicle load control system. In this system, the control section 11 consists of various control switches arranged in a switch panel SP placed on the top of a switch box 100 beside a bus driver's seat. The control signals output from the control section 11 are intensively input to the SW unit 10. The thus input control signals are sent to the load drive unit A 20 disposed in the switch box 100 and the load drive unit B 30 situated at an arbitrary position through the wire harness 40a and 40b. As a result, the corresponding loads are controlled. The SW unit 10 is mounted inside the switch box 100 installed on the right side of the drivers's seat. The control signals output as a result of the actuation of the control switches are input to the SW unit 10, and the SW unit 10 converts the signals into data and sends the thus converted data to the load drive unit A 20 and the load drive unit B 30 through the multiplex transmission lines consisting of the wire harness 40A and 40B (column 7 lines

Thus, it is disclosed the drive control unit (either 20, 30) connected to the front ECU via wire harness (40, 40a, 40b) which serves as a sub bus line.

Lastly, Oniishi discloses that the connector B1 is used for producing a fluorescent lamp light modulation signal, and connectors B2 and B7 are used for producing an IPS/relay coil output. Connectors B3-B5, B8, and B12 are used for producing IPS outputs. Connector B6 is used for producing an incandescent lamp light modulation output. Connectors B9, B14, and B15 are used for producing outputs related to a ventilating fan. A connector B10 is used for connecting the load drive unit B 30 to GND, and a connector B11 is used for providing

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connection to mirrors and elements associated with them. A connector B13 is used for producing outputs related to IPS and an alarm bell, and a connector B16 is used for producing outputs for IPS, a timer, and the foot lamp. A connector B17 is used for connecting the load drive unit B 30 to the external monitor. A connector B18 is a first connector for connecting the load drive unit B 30 to the load drive unit A 20, and a connector B19 is a second connector for connecting the load drive unit B 30 to a load drive unit A 20 (column 13 lines 17-32).

Thus, it is disclosed that the electrical connector (30) containing the drive control unit (30, 311 in Fig. 15) is fitted with direct communication to at least one of the load electrical parts. However, while Oniishi does disclose the same structure and elements as claim 1, Oniishi only discloses that the data is modified in the front electrical control unit, and does not explicitly disclose that the protocol has been converted to a secondary protocol, the first and second protocols varying in communication speed.

Kikkawa teaches a multiplex vehicular communication invention (title), which contains a data relay unit which has a plurality of send/receive (SR) sections. Communication lines are connected to the respective SR sections, and nodes are connected to the communication lines. The data relay unit further includes a destination table and header tables. In the data relay unit, a data frame sent from a node is received by one of the SR sections, and the SR sections which ought to send the data frame are identified by referring to the destination table. A header according to the appropriate communication protocol is formed by referring to one of the header tables. Further the data frame including the formed header is formed and sent to the destination node by the identified SR sections. When nodes are added or eliminated, this system can be

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reconfigured only by modifying or replacing the destination table and the header tables (abstract).

Thus, it is taught a control unit configured to convert a communication protocol of a first bus to a communication protocol of a second bus when necessary.

Kikkawa teaches that in all the nodes in the multiplex communication system are appropriately divided into the networks according to the required communication speed and the amount of data to be sent. The communication protocol used in each network 11-14 is also determined according to the required communication speed and the amount of data to be sent (para 0027).

Thus, each sub-bus in the invention of Kikkawa is distinct from the other in the protocol used, the protocol (CAN, BEAN, IEBUS, ISO9141, see fig.1) being chosen with respect to communication speed.

Oniishi has disclosed a base invention which is capable of all functions of the claimed embodiments, including a vehicle infrastructure in which data is modified so that communication between vehicle components is enabled. Where Oniishi is deficient, with respect to claim 1 is that Oniishi does not explicitly disclose wherein the protocol is changed with respect to transmission speed. Kikkawa cures the deficiency.

Thus, since both inventions both disclose/teach similar elements and usage, it would have been obvious to one of ordinary skill in the art at the time of the invention to simply substitute one apparatus into the other, or at least combine their respective elements, to achieve no more than the predictable result of a control unit configured for protocol conversion. Doing so would

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provide for communication between vehicle ECUs with respect to message priority and communication speed.

Combining prior art elements according to known methods to yield predictable results is a rationale to support a conclusion of obviousness. See MPEP 2143(A).

Simple substitution of one known element for another to obtain predictable results will support a conclusion of obviousness. See MPEP 2143 (B).

Therefore, the Examiner maintains the rejection of claim 1 (and subsequent claims 3, 5, and 7-12) under 35 U.S.C. 103(a) for those reasons cited above, and those mentioned in the prior office action, which is incorporated herein.

2a. It is noted that the Applicant has contended (see page six, first paragraph) that Oniishi has not disclosed the amended embodiments of claim 1, specifically wherein the connector is fitted by direct connection to at least one of the load electrical parts.

The Examiner, respectfully disagrees; as cited above (see Oniishi at column 13 lines 17-32), Oniishi discloses that connector (30) containing the drive controller (311) contains multiple connectors (B1, B2...Bn) fitted to it that are directly coupled to the load electrical parts. Thus, given the broadest reasonable interpretation of the claimed embodiments, since there is a direct connection to the load electrical parts from the connector, the connector is fitted by direct connection.

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Therefore, given the broadest reasonable interpretation of the claims, the Examiner maintains the rejection of claim 1 (and subsequent claims 3, 5, and 7-12) under 35 U.S.C. 103(a) for those reasons cited above, and those mentioned in the prior office action, which is incorporated herein.

3. Although not specifically argued, claims 4 and 6 remain rejected under 35 U.S.C. 103(a) for those reasons cited above, and those mentioned in the prior office action, which is incorporated herein.

Intended Use

It is noted that claims 3-12 contain multiple statements of intended use or field of use (e.g. “for driving”, “wherein...converts”, etc.). These statements of intended/field of use or wherein clauses are essentially method limitations. While these claims have been given their full patentable weight, these claims, as well as other statements of intended use, do not serve to patentably distinguish the claimed structure over that of the reference.

See MPEP § 2114 which states:

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions.

Apparatus claims cover what a device is not what a device does.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

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Additionally, the terms "configured to" or "arranged to" are considered to be structurally modified statements and are not intended use. Claims amended to include the above listed language may patentably distinguish themselves structurally.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN M. DAGER whose telephone number is (571)270-1332. The examiner can normally be reached on 0830-1800 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jonathan M Dager/
Examiner, Art Unit 3663
14 December 2010